E/CONF.39/D/175
SUMMARY
9 Nov.1962
ORIGINAL : ENGLISH

UNITED NATIONS CONFERENCE
ON THE APPLICATION OF SCIENCE AND TECHNOLOGY
FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

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Agenda Item : D.2

United States of America

INTEGRATED RIVER BASIN DEVELOPMENT AND INDUSTRIALIZATION : THE TENNESSEE VALLEY EXPERIENCE

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1. The Tennessee Valley Authority (TVA) project, now in its 30th year, can provide valuable guidance for the industrialization efforts of the less developed areas. Over the last three decades, the Tennessee Valley region has shifted from a predominantly agricultural area to an important and expanding industrial region. Manufacturing employment and income have expanded more rapidly in the region than in the United States as a whole. The agricultural sector, on the other hand, has followed national patterns; farm employment declined sharply and total farm income expanded at a modest rate. Due in large part to rapid industrialization, average per capita income in the Tennessee Valley increased fourfold since 1929 and by 1960 was 64 per cent of the national average as compared to 45 per cent thirty years before.

2. It must be emphasized, however, that many forces in addition to the integrated river basin project of TVA contributed to this industrialization. River basin projects are not comprehensive development programs and generally involve limited authority over many policies and activities essential to development success. Such projects can increase industrialization potentials by improving the physical availability and cost conditions of certain regional resources such as hydro-electric power, forest products, industrial water, agricultural materials and water transportation. But markets must exist for the specific resources being improved and entrepreneurship, either government or private, must be active.

3. The special feature of integrated river basin projects is that a number of related resource development activities complement each other in providing a base for industrial expansion. As one example, a large newsprint plant located in the Tennessee Valley was attracted to the region by at least five resource programs — electric power, forest improvement, industrial water, water transportation and flood control.

4. In addition to its programs for physical improvement of water, land, forest and mineral resources, the TVA also influencedindustrialization through regional planning activities, industrial process research, techno-economic industrial opportunity studies and other types of technical research. The state and local governments as well as private groups in the Tennessee Valley states have supplemented TVA programs and contributed to industrialization through a wide range of industrial promotion activities including financial assistance to new industries.

5. Specific industry types whose expansion in the Valley region have been directly stimulated by the integrated river basin program are industrial chemicals, primary metals (mainly aluminum and ferroalloys), pulp and paper, food processing and electrical machinery. In general, the new manufacturing establishments have been highly

capital intensive and oriented to a national market. In one new industrial area with a concentration of chemicals and ferroalloys plants, the investment in manufacturing plants and supporting electric power capacity averaged almost $90,000 for each new industrial job.

6. In its early days, the TVA was strongly interested in encouraging rural and handicraft industries but limited success in this direction indicates that these types of industries are not a promising solution in the Tennessee Valley for employing surplus workers in agriculture. Manufacturing activity has continued to be heavily concentrated in urban and metropolitan areas.

7. The resource composition and the environment for integrated river basin projects in other areas is likely to differ greatly from the TVA situation. Nevertheless, the less developed areas can benefit by examining the different aspects of the TVA experience and by reformulating the results of TVA's thirty years of experience to fit their different circumstances. Fortunately, the TVA experience has been unusually well documented and analyzed from many standpoints.

8. Integrated river basin projects are massive investment ventures and are neither a cheap nor a quick way to create new industrial employment. But over a long period they can stimulate a significant amount of industrialization. The early planning of such projects must be integrated into national planning so that specific river basin programs will fit national development needs rather than the physical resource characteristics of the area. Furthermore, many complementary programs and projects beyond the normal scope of river basin projects are absolutely essential to secure rapid and significant industrialization results. Particularly important is the need to upgrade human and institutional resources to the point where they can make effective use of the direct results of the physical resource development programs.

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